



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,659	03/15/2002	Jeffrey A. Tilton	25102A	2971

22889 7590 06/02/2005

OWENS CORNING  
2790 COLUMBUS ROAD  
GRANVILLE, OH 43023

EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/099,659

Applicant(s)

TILTON, JEFFREY A.

Examiner

Jennifer A. Boyd

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-7 and 9-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,9-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The Applicant's Amendments and Accompanying Remarks, filed March 25, 2005, have been entered and have been carefully considered. Claims 2 – 3 are amended and claims 27 – 29 are amended and claims 1 – 3, 5 – 7 and 9 – 29 are pending. In view of Applicant's amendments and arguments, the Examiner has revised the previously applied rejection as being obvious over Goettmann below. The present invention as currently is unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Objections***

3. Claims 16, 19 and 28 objected to because of the following informalities: Please amend the claims to read “degrees Celsius” or “°C” instead of “EC”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1 – 3, 5 – 7 and 9 – 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goettmann (US 5,851,355).

Goettmann is directed to a nonwoven composite web useful as a support for a reverse osmosis membrane (column 1, lines 5 – 10).

As to claims 1 – 3, 27 and 29, Goettmann teaches a composite material comprising polymeric staple fibers, a first fiber consisting of, at least in part, of a first thermoplastic binder

Art Unit: 1771

material which melts at a temperature less than the melting temperature of the polymeric staple fibers, and a second binder fiber consisting of, at least in part, of a second thermoplastic binder material which melts at a second melting temperature less than the first melting temperature (column 2, lines 40 – 55). Goettmann teaches that the composite material comprises 5 to 40% by weight of a first polyester staple fiber, 0 to 60% by weight of a second polyester staple fiber, 15 to 50% by weight of a first thermoplastic binder fiber and 1 to 10% by weight of a second thermoplastic binder fiber (column 3, lines 55 – 68). Goettmann teaches that the first and second thermoplastic binder fibers are sheath-core bicomponent fibers (column 2, lines 55 – 65). The Examiner equates the polymeric staple fibers to Applicant's "staple fibers", the first thermoplastic binder material to Applicant's "high melt bicomponent fibers" and the second thermoplastic binder material to Applicant's "low melt bicomponent fibers". Goettmann teaches that the first and second bicomponent binder fibers has a co-polyester sheath and a polyester core (column 2, lines 55 – 65). It is known in the art that Kuraray EP-101 fibers and N-720H fibers (column 4, lines 1 – 20) comprise polyethylene terephthalate as the polyester component.

As to claims 9, 12 and 13, Goettmann teaches that the staple fibers comprise polyester fibers (column 2, lines 55 – 60).

As to claims 14 - 15 and 17 - 18, Goettmann teaches that the first and second bicomponent binder fibers have a co-polyester sheath and a polyester core (column 2, lines 55 – 65). It is known in the art that Kuraray EP-101 fibers and N-720H fibers (column 4, lines 1 – 20) comprise polyethylene terephthalate as the polyester component.

As to claims 16, 19 and 28, Goettmann teaches that the second thermoplastic binder fibers, or "low melt bicomponent fibers", have a co-polyester sheath that melts at 225°F

Art Unit: 1771

(107.2°C) (column 2, lines 55 – 65). Goettmann teaches that the first thermoplastic binder fibers, or “high melt bicomponent fibers”, have a co-polyester sheath that melts at 375°F (190.5°C) (column 2, lines 60 – 65).

As to claims 1 – 3, 5, 27 and 29, Goettmann discloses the claimed invention except for that the average fiber diameter of the low melt bicomponent fiber, the high melt bicomponent fiber and staple fiber have a diameter between about 18 – 22 microns as required by claim 1, the average diameter is between 10 – 30 microns as required by claim 2, the average diameter is between 16 – 24 microns as required by claim 3, the average diameter is between 18 – 30 microns as required by claim 27, the low melt bicomponent fiber is present in the amount of 20 – 60% by weight as required by claims 1 – 3, 27 and 29 and that the density is between about 1.0 – 10 pcf as required by claims 5, 27 and 29. It should be noted that the amount of low melt bicomponent fibers, fiber diameter and density are result effective variables. Goettmann teaches that variations and modifications of the composition may be devised and are within the scope and spirit of the invention. Goettmann teaches that it would be obvious to one of ordinary skill in the art that the range and blend of bicomponent fibers may be varied to effect the desired physical properties. Goettmann teaches that the physical properties (i.e., density) as well as the performance of the sheet material can be altered to fit a particular set of physical specifications (column 6, lines 18 – 43). Additionally, it is known in the art to adjust the fiber diameter of the composition in order to adjust the properties of the composite. It should be noted that Goettmann positively requires that the staple fibers be within the range of 0.2 to 3.0 denier (column 3, lines 5 – 10). In the Remarks submitted on 5/28/05, the Applicant submits that the denier range of 0.2

Art Unit: 1771

– 3.0 denier is equivalent to a diameter of 4.5 – 17.6 microns, which touches Applicant's claimed range when rounded. It should be noted that Applicant uses the word "about" in regards to the range, so 17.6 microns would render 18 microns obvious. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create an insulating material that the average fiber diameter of the low melt bicomponent fiber, the high melt bicomponent fiber and staple fiber have a diameter between about 18 – 22 microns as required by claim 1, the average diameter is between 10 – 30 microns as required by claim 2, the average diameter is between 16 – 24 microns as required by claim 3, the average diameter is between 18 – 30 microns as required by claim 27, the low melt bicomponent fiber is present in the amount of 20 – 60% by weight as required by claims 1 – 3, 27 and 29 and that the density is between about 1.0 – 10 pcf as required by claims 5 27 and 29, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the average fiber diameter, percentage of low melting bicomponent fibers and density to create an insulating material with optimal strength and flexibility.

As to claims 5 – 7, 10 – 11 and 21 – 26, although Goettmann does not explicitly teach the claimed flexural strength of between about 40 – 1200 psi as required by claim 5, the material has the acoustical absorption coefficients as shown in claims 6, 10 and 21 - 26, the material has thermal conductivity value of between about 0.20 and 0.30 at 2 pcf density as required by claims 7 and 11, it is reasonable to presume that the claimed flexural strength of between about 40 – 1200 psi as required by claim 5, the material has the acoustical absorption coefficients as shown

Art Unit: 1771

in claims 6 and 10, the material has thermal conductivity value of between about 0.20 and 0.30 at 2 pcf density as required by claims 7 and 11 and the acoustical absorption coefficients as shown in claims 21 – 26 is inherent to Goettmann. Support for said presumption is found in the use of like materials (i.e. a nonwoven material comprising polyester staple fibers and two types of polyester/copolyester bicomponent fibers in the desired proportions and fiber diameter ranges) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of flexural strength of between about 40 – 1200 psi as required by claim 5, the material has the acoustical absorption coefficients as shown in claims 6 and 10, the material has thermal conductivity value of between about 0.20 and 0.30 at 2 pcf density as required by claims 7 and 11 and the acoustical absorption coefficients as shown in claims 21 – 26 would obviously have been present once the Goettmann product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

As to claim 20, Goettmann discloses the claimed invention except for that the high melt bicomponent fiber can be substituted in part or whole by crystalline/semi-crystalline bicomponent fibers having a melt flow temperature of about 150 to about 180 degrees Celsius. It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the high melt bicomponent fibers in part or in whole with crystalline/semi-crystalline bicomponent fibers since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. Goettmann teaches that binder fibers different than

Art Unit: 1771

those specified may be used, so long as the binder fiber contains thermoplastic material having a melting point lower than that of the polyester fibers and providing adequate bonding of those polyester fibers to form a non-woven web with a high tensile strength (column 6, lines 28 – 35). In the present invention, one would have been motivated to replace the high melt bicomponent fiber in part or whole with crystalline/semi-crystalline bicomponent fibers having a melt flow temperature of about 150 to about 180 degrees Celsius due to the desire to increase the range of applications of the composite material.

### *Response to Arguments*

5. Applicant's arguments with respect to claims 1 – 3, 5 – 7 and 9 – 20 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant argues that Goetmann does not teach incorporating 20 – 60% by weight of low melt bicomponent fibers. The Examiner has amended the rejection above and has submitted that it would have been obvious to optimize the amount of low melt bicomponent fibers. Goetmann provides support to adjust various parameters such as the amount of bicomponent fibers. Goetmann teaches that it would be obvious to one of ordinary skill in the art that the range and blend of bicomponent fibers may be varied to effect the desired physical properties (column 6, lines 18 – 43).

7. Applicant argues that Goetmann does not teach an average fiber diameter between about 18 – 22 microns. In the Remarks submitted on 5/28/05, the Applicant submits that the denier range of 0.2 – 3.0 denier is equivalent to a diameter of 4.5 – 17.6 microns, which touches Applicant's claimed range when rounded. It should be noted that Applicant uses the word



Art Unit: 1771

“about” in regards to the range, so 17.6 microns would render 18 microns as being obvious. If Applicant intends to require that the average diameter is between 18 – 22 microns, the Applicant should eliminate the term “about”.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer Boyd  
May 29, 2005

  
**Ula C. Ruddock**  
Primary Examiner  
Tech Center 1700